

# THE INNOVATION CATALYST

## STRATEGIC PARTNERSHIPS OFFICE NEWSLETTER SEPTEMBER 2020

### HELP NASA AVOID PIRACY BY PROTECTING YOUR WORK

Ahoy, matey! September 19 is International Talk Like a Pirate Day, and we're taking the opportunity to talk about a form of treachery that doesn't involve swashbuckling on the high seas – intellectual property piracy. We talk a lot about patents at the Strategic Partnerships Office (SPO), and that's because they're the form of intellectual property (IP) protection that NASA most often uses to safeguard inventions from piracy and other forms of IP theft. Let's set sail and take a closer look at the different types of IP and why preventing IP piracy matters.

#### WHAT IS INTELLECTUAL PROPERTY?

According to the [U.S. Patent and Trademark Office \(USPTO\)](#), "intellectual property refers to creations of the mind – creative works or ideas embodied in a form that can be shared or can enable others to recreate, emulate, or manufacture them." As a government laboratory, Goddard produces large volumes of IP each year, and it's up to SPO and the Office of Patent Counsel (OPC) to decide what to protect and how to protect it. For the past few years, OPC typically has filed 30-40 patent applications per year.

Goddard IP can be found in everything from software packages and algorithms to instrument parts and satellite subsystems. Innovative methods and approaches can also be considered IP. Even though Goddard doesn't have the resources to protect every innovation, it's crucial to report any potential IP in the form of a New Technology Report (NTR).

Though an NTR is not a form of IP protection, it can help document your invention and serve as evidence of your role as inventor. IP that isn't patented can still be disseminated for use in some cases. Goddard software

rarely receives a patent, but can be copyrighted. By participating in the [software release](#) process, developers can share their code in a controlled and documented manner through [NASA's Software Catalog](#).

#### TYPES OF IP PROTECTION

According to the USPTO, there are four main types of IP protection: patents, trademarks, copyrights, and trade secrets. Each form has its own stipulations that apply to specific kinds of IP.

Patents represent the most common form of IP protection at Goddard. In order to qualify for a patent, an innovation must be "new and useful" as well as non-obvious, and it can be an improvement on a previous invention. NASA submits an application for a patent to the USPTO, which includes the description and claims, drawings, and fees. If granted, a patent provides protection for 20 years after the filing date, but maintenance fees must be paid to keep the patent active for the full 20 years.

Trademarks apply to "a word, phrase, symbol, or design" or some combination of those items. They help identify a product, making it distinguishable from other products. Those pursuing trademarks can file an application online with the USPTO, and registration fees and maintenance documents help maintain a trademark. One Goddard-specific example of a trademark is "SpaceCube." The technologies in SpaceCube are protected by patents, but the word "SpaceCube" is trademarked.

Copyrights protect original works of authorship – someone seeking a copyright would apply to the U.S. Copyright Office. Although registration with the U.S. Copyright

Office isn't required for protection, it can be advantageous to do so. Copyrights often apply to music, screenplays, novels, poems, software, and many other creative pursuits. Generally, the copyright lasts 70 years after the author's death. When it comes to protecting software, copyrights are more often used than patents.

Finally, trade secrets protect information that has commercial value – think recipes for famous beverages or desserts. As a federal agency, NASA is unable to utilize trade secrets to protect its IP.

In short, securing legal protection for your IP is the best way to make sure it doesn't get stolen.

## PREVENTING PIRACY

Let's say you're about to publish a paper on your work, and it includes information about an innovation that you plan to disclose in an NTR. Without the legal protection of a patent or NTR that demonstrates your role as inventor, anyone who reads your paper could take your idea and run with it. If someone else builds on your work to create new IP, it reduces the value of your own IP and can be used against you if you plan to obtain legal protection later.

Furthermore, securing legal protection for your IP ensures that the government has legal grounds to prevent NASA innovations from being utilized improperly. While you might be happy to share your work with academic collaborators, some user groups might seek out your technology for harm.

As always, you can reach out to SPO and OPC with questions about protecting your work. There's no need to risk losing your IP, so email [techtransfer@gsfc.nasa.gov](mailto:techtransfer@gsfc.nasa.gov) with your questions. You can talk like a pirate all you want, but please help NASA avoid being pirated!

# TYPES OF IP

	Definition	Protects	Duration
Copyright	A form of protection provided to the authors of original works of authorships.	Protects literary, dramatic, musical, artistic, and certain other intellectual works.	Author's life + 70 years
Trademark	Any word, name, symbol, device, or any combination, used, or intended to be used, in commerce to identify and distinguish the goods or services.	Includes logos, banners, sounds, smells, etc.	10-year terms with 10-year renewal terms
Patent	A grant of property rights by the U.S. Government through the USPTO.	"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent." *	Utility/Plant Patents – 20 years from the date of filing. Design Patents – 15 years* after patent is issued. *For design patents filed after May 13, 2015.
Trade Secret	Information that provides economic value that is not in the public domain and that has been reasonably kept secret.	Formulas, patterns, compilations, programs, devices, methods, techniques, or processes.	Trade secrets last as long as they remain secret.

NEED MORE INFORMATION? VISIT:

### COPYRIGHT

<https://www.copyright.gov/>

### TRADEMARK

<https://www.uspto.gov/trademark>

### PATENT

<https://www.uspto.gov/patent>

# ----- TYPES OF IP

# GODDARD READS:

## *Celebrating Nine Years of Partnership with Tor Books*

The “Goddard Reads” virtual event series celebrated nine years of partnership between NASA’s Goddard Space Flight Center and Tom Doherty Associates, LLC (Tor-Forge or Tor Books), a leading publisher of science fiction works. Using a Space Act Agreement to promote the science and minimize the fiction in “science fiction,” Goddard has connected subject matter experts in science and engineering with Tor Books authors. Through this collaboration, not only will the NASA-inspired works of fiction promote public awareness of NASA’s programs and missions, but they will also inspire young minds to embrace careers in science and technology as exciting and fulfilling opportunities.

The “Goddard Reads” virtual event series explored how Tor Books authors and their reader base can benefit from subject matter expertise from NASA and other sources, while also featuring Goddard internal science communicators, who shared their experience working at the intersection of writing and STEM.



The first event, “A Conversation on Science Fiction Writing with Tor Books Authors Martha Wells and Mary Robinette Kowal,” brought two Tor Books authors to an interactive Goddard audience. After reading excerpts from their work, the authors discussed how subject matter experts have informed their work and how they might interact with subject matter experts for future projects. Kowal shared her experience talking to astronauts at the Neutral Buoyancy Lab at NASA’s Johnson Space Center, explaining how their input helped her craft realistic scenes in her “Lady Astronaut” series of novels. Wells answered questions about the origins of her snarky “Murderbot” character, and both authors discussed their writing process as well as their favorite writers.

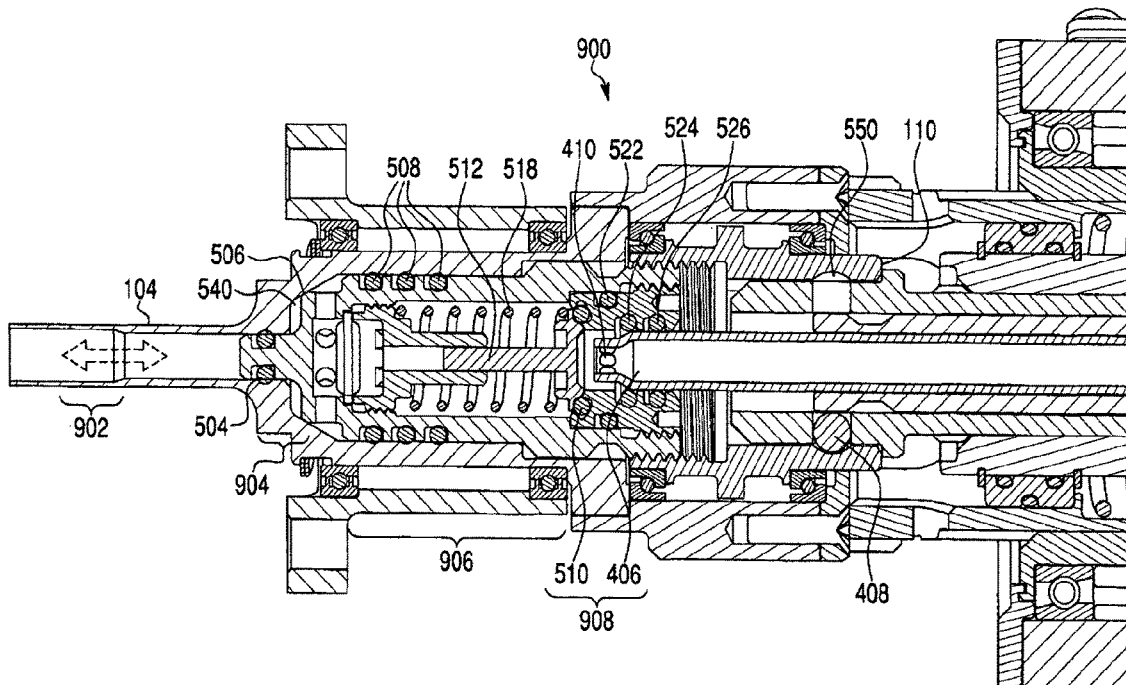
The next installation of the series, “Bringing Comedy into Science,” featured Goddard science writer Kasha Patel, who also performs standup comedy with a science spin. She shared her perspective on infusing science communication with comedy and explained how she crafts a stellar science joke. Patel answered questions about how she deals with hecklers, her standup comedy inspirations, and her experience as a woman in male-dominated industries. You can catch the presentation [recorded on Ustream](#).

On Sept. 8, Goddard science writer Ellen Gray talked about how she crafts a good science story, and on Sept. 15, Tor Books author Karen Osborne read an excerpt from her debut novel, “Architects of Memory,” and discussed her approach to using science as a storytelling tool. The series has finished, but please email [valeriya.a.nakshun@nasa.gov](mailto:valeriya.a.nakshun@nasa.gov) with your suggestions for future events with Tor Books. Thank you to all who attended!

# Guess The Patent Drawing!

- 1** The technology was invented by Hans Raven, Matthew Ashmore, and Erich Schulze.
- 2** This technology is designed to deliver faster, more efficient fuel transfer to satellites in orbit.
- 3** The technology was patented in 2020.

Can you guess the invention? [Click here](#) for the answer.



## Tech Transfer Trivia: Intellectual Property Edition

- 1** What type of intellectual property protection is used for creative works, such as novels, screenplays, or poems?  
A. Trademark B. Copyright C. Patent D. Trade Secret
- 2** Publishing your work in a paper is enough to protect it legally.  
A. True B. False
- 3** What type of intellectual property protection is used to distinguish one product name or logo from another?  
A. Trademark B. Copyright C. Patent D. Trade Secret

[Link To Answers](#)



# Recent SPO Activities

## SMALL SATELLITE CONFERENCE 2020 – Q&A WITH ERIN MAJEROWICZ

The annual Small Satellite Conference in Logan, Utah, is usually Goddard's chance to meet in-person with members of the SmallSat industry and raise awareness of Goddard technologies available for licensing. But when the pandemic sent most of NASA to remote work, conference planners had to quickly figure out what a virtual conference would look like. This year's conference took place in August, and for the first time, it went forward in an entirely digital format. The Innovation Catalyst caught up with SPO Marketing Lead Erin Majerowicz to learn more about Goddard's participation in the virtual conference.

### **YOU'VE COORDINATED GODDARD'S PARTICIPATION IN THE ANNUAL SMALL SATELLITE CONFERENCE FOR YEARS, BUT WHAT WAS IT LIKE TO PREPARE FOR THE FIRST ALL-VIRTUAL VERSION OF THE CONFERENCE?**

There was definitely a learning curve and some lessons learned from planning Goddard's first virtual conference. We started planning for the conference before the pandemic and before things moved into the virtual environment. As such, we weren't sure what the conference would look like and if it was even going to happen. In late April, we received word that the conference had officially gone virtual. Thankfully, we had already started creating materials and pulling content that could easily be repurposed digitally. One of the biggest things we had to decide as a team was how we'd go virtual and what we'd do to make ourselves stand out. Once we figured that part out, we were able to pull the right team together to make it happen. We had team members from different organizations across Goddard, (the SmallSat Office, the Code 780 web development team, and our office, SPO) that had great communication and worked very well together from day one. We also had participation and support from other groups, like Space Communications and Navigation (SCaN), the Office of Communications and the Office of STEM Engagement, who helped round out content and live sessions. It was a lot of work and a lot of content to pull together, but in the end, I think our virtual exhibit exceeded all of our expectations! I know I'm proud of the work the team did to make Goddard's virtual exhibit a success.

### **WHAT WERE YOUR MAIN TAKEAWAYS FROM THIS YEAR'S CONFERENCE? WHAT DID YOU LEARN ABOUT THE STATE OF THE SMALLSAT INDUSTRY?**

The conference had its highest participation numbers this year than ever before with more than 8,000 people. I think this is in large part due to the accessibility of it – it wasn't cost prohibitive for attendees because it was free to attend and there was no travel. I believe this allowed for more international participation as well as student participation. Based on our Goddard virtual exhibit web traffic metrics, we had page views from all over the world – Canada, the U.K., Guatemala, Argentina, and Australia, to name a few.

The SmallSat industry is tenacious. They have not, and will not, let the pandemic slow them down. Since SmallSats can be relatively inexpensive to make, and because they are smaller in size, industry and universities can take risks and push the limits to discover what is possible for science and technology. It's inspiring to see and hear how the SmallSat community is continuing to do that and how NASA is part of it.

### **WHAT WERE A FEW OF THE MOST POPULAR PRESENTATIONS, AND WHAT QUESTIONS DID THE AUDIENCE HAVE?**

One thing that made this particular conference different from any of our in-person conferences is that we were able to create a solid line-up of virtual presentations, everything from internships at NASA to discussions about specific technologies and capabilities. Since we recorded the talks, people who couldn't attend the live sessions were able to tune in later. The SmallSat Software Series was a huge hit for Goddard's virtual exhibit. We had three presentations dedicated to NASA's latest Software of the Year Award recipient, [core Flight System \(cFS\)](#). The presentations were each given by Goddard SmallSat innovators who either helped develop it, integrated it, and/or are currently working on it. We saw a lot of attendees return to all three sessions so they could really learn what cFS is, how it is currently being used at NASA, and how they can access and incorporate the software in their own projects. The audience had great questions about how to use the technology in different ways and what might be possible for the technology in the future. Our speakers for each of the sessions were incredibly dynamic and even attended one another's presentations to lend support when questions fell into areas that pertained to their portion of the topic.

# Recent SPO Activities

## SMALL SATELLITE CONFERENCE 2020 — Q&A WITH ERIN MAJEROWICZ (CONT'D)

### HOW DID GODDARD INNOVATORS PARTICIPATE, AND HOW DID SPO HIGHLIGHT TECHNOLOGIES AVAILABLE FOR LICENSING?

Having worked with Goddard's SmallSat community for a few years now, I always knew that the team was amazing, but they went above and beyond to make our first virtual conference a success. All exhibitors were essentially competing with one another for audience participation and page views because we were all in the same virtual boat. We needed to make sure our site, materials, and sessions garnered buzz and drew people in. For that, we had to heavily rely on the SmallSat community for content creation (in a very short amount of time, too). The Goddard SmallSat team created video interviews, participated in live panels and sessions, helped provide imagery, and reviewed the technical content created for the site. Innovators were excited and more than willing to help us make the conference a success!

SPO highlighted technology available for licensing in a few different ways. SPO Deputy Chief Kerry Leonard and HQ's Joe Kroener teamed up for a live session about how to work with NASA, focusing on licensing and partnerships. We also created various downloadable materials – a SmallSat technology PDF, a SmallSat brochure, and [an edition of \*The Spark\*](#) focused solely on Goddard's SmallSat projects, missions, technology, and capabilities.

### WAS THERE ANYTHING ABOUT THE VIRTUAL CONFERENCE THAT SURPRISED YOU OR STRUCK YOU AS PARTICULARLY MEMORABLE?

Going into the virtual conference, we weren't sure what to expect in terms of participation for our live sessions, especially since we weren't the only virtual exhibit trying to pull attendees in. We put together a great lineup that covered a lot of information – highlights of specific projects and technology, panels on lessons learned, internship opportunities, and non-procurement ways to work with NASA – but we had no idea what the numbers would look like. We hoped for maybe an average of 30 attendees for each session and we exceeded our own expectations by nearly double for a majority of our sessions and even triple for some!

### WOULD YOU RECOMMEND PARTICIPATING IN VIRTUAL CONFERENCES IN THE FUTURE? HOW DO YOU THINK GODDARD CAN USE THESE CONFERENCES AS TOOLS FOR COMMUNITY ENGAGEMENT?

I would recommend participating in virtual conferences in the future. It removes some of the resource burden that may prevent someone from attending in-person conferences. You can connect with people around the globe in the click of a button. Students and faculty can also be part of the experience, too, because they can access information and connect with subject matter experts (SMEs) directly in real-time. Of course, there are things that virtual conferences will never be able to replicate, but I do think it helps close the gap between the attendees. I don't know that we'll ever be able to really capture the in-person networking, arguably one of the most beneficial parts of conferences, in a virtual setting, but I do think we did a really good job of trying to capture that as best we could by making SMEs accessible to participants through virtual Goddard SmallSat Office Hour sessions.

Goddard can use these conferences to not only showcase what Goddard is doing in a particular industry area, but also to learn about what industry is doing, where it's heading, and what it currently needs. A virtual industry day could help a lot of different groups at Goddard put their technology, capabilities, and knowledge in the forefront. In fact, NASA's Exploration and In-space Services (NExIS) projects division will host a [virtual industry day](#) on Sept. 22-23. We're looking to do more with other teams at Goddard, and across the agency, in the future!

# Upcoming Events

## OSAM TECHNOLOGY TRANSFER WORKSHOP

Sept. 22-23, 2020

NASA hosts an annual technology transfer workshop to facilitate the transfer of On-orbit Servicing, Assembly, and Manufacturing (OSAM) technologies to U.S. industry. Due to precautions surrounding COVID-19, the fifth OSAM Technology Transfer Workshop will be held virtually on Sept. 22-23. Workshop attendees will enjoy access to an updated technology catalog, information about the latest developments from NASA subject matter experts, and a tour of NASA facilities.

This year's workshop has been expanded to two days to include additional segments from other government agencies and presentations from industry innovators. Presentations will include an introduction to OSAM technologies that NASA has developed in support of OSAM-1 and OSAM-2 missions, as well as information on licensing processes and contract opportunities. The workshop will be jointly hosted by NASA's Langley Research Center, Goddard Space Flight Center, and Marshall Space Flight Center.

On Sept. 22, don't miss SPO Deputy Chief Kerry Leonard speaking with Carrie Rhoades of Langley and Jeramie Broadway of Marshall about NASA partnerships and technology transfer. For the full schedule and registration, [please click here](#).



WOULD YOU LIKE "THE INNOVATION CATALYST" SENT DIRECTLY TO YOUR INBOX?

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